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Phaeocandelabrum pseudocallisporum sp. nov. from Brazil

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Abstract—*Phaeocandelabrum pseudocallisporum*, collected on decaying twigs in the Brazilian Cerrado of Mato Grosso do Sul State, is described and illustrated as a new species. The fungus is characterized by complex conidia with two brown central cells and 4–6 secondary cells that produce 4–5 tertiary cells at the apex. This species is easily distinguished from *P. callisporum* by the presence of stellate tertiary cells that produce five radial projections.

Key words—conidial fungi, taxonomy. tropical fungi

Introduction

Phaeocandelabrum R.F. Castañeda & al. is characterized by acrogenous complex multi-cellular branched and irregular pyramidal, turbinate, globose, or Y-shaped conidia produced by rhexolytic secession. The complex conidia are composed of a central cell giving rise to secondary and tertiary cells (Castañeda-Ruiz & al. 2009). *Phaeocandelabrum* comprises three species: *P. elegans* (R.F. Castañeda) R.F. Castañeda & al. (type), *P. callisporum* Gusmão & al., and *P. joseiturriagae* R.F. Castañeda & al. During a survey of microfungi associated with twigs from an urban fragmental Cerrado forest in the Private Natural Heritage Reserve of the Federal University of Mato Grosso do Sul (RPPN/UFMS), we collected an interesting specimen described below as a new *Phaeocandelabrum* species.

Materials & methods

Samples of decaying twigs were collected and placed in paper bags. In the laboratory, the samples were processed following Castañeda-Ruiz & al. (2016) and regularly examined for 40 days under a Leica S8AP0 stereomicroscope for reproductive structures. Slide mounts were prepared in PVL (polyvinyl alcohol, lactic acid, and phenol) and/or in lactic acid. Microphotographs were obtained with the Olympus BX51 microscope with Differential Interference Contrast (DIC) optics. The type specimen is deposited in the Herbarium of Universidade Estadual de Feira de Santana, Brazil (HUEFS).

Taxonomy

Phaeocandelabrum pseudocallisporum Careli & Gusmão, **sp. nov.** Plate 1

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Differs from *Phaeocandelabrum callisporum* by the presence of sickle-shaped tertiary cells.

Type: Brazil, Mato Grosso do Sul State: Campo Grande, Private Natural Heritage Reserve of the Federal University of Mato Grosso do Sul (RPPN/UFMS), 20°30′S 54°36′W, on decaying twigs of unidentified plant, 24.VIII.2018, coll. Santos, DC (**Holotype**, HUEFS 252202).

Etymology: Greek, *pseudo-*, meaning false, indicating its similarity to *P. callisporum*.

Mycelium superficial and immersed, hyphae branched, septate, smooth, and pale brown. Conidiophores macronematous, mononematous, usually unbranched, cylindrical, erect, straight, or slightly flexuous, smooth, 3–5-septate, pale brown, slightly swollen at the base, 69–88 × 5–6 µm. Conidiogenous cells monoblastic, terminal, integrated, cylindrical, smooth, with 2–4 percurrent extensions, pale brown. Conidial secession rhexolytic. Conidia solitary, acrogenous, subglobose to broadly ellipsoid, smooth, dry, brown, with a basal frill, 24–26 × 21–24 µm; complex and comprising i) 2 thick-walled central cells, 8–11 × 7–11 µm, brown to dark brown, apical cell globose and basal cell slightly turbinate; ii) 4–6 cylindrical to doliiform secondary cells, 4–6 × 4–5 µm, pale brown; and iii) 4–5 sickle-shaped tertiary cells, 10–11.5 × 1–1.5 µm, pale brown.

Note: Three species have been previously included in *Phaeocandelabrum*. The most similar to *P. pseudocallisporum* is *P. callisporum*, which also presents complex conidia, with two central cells and more or less doliiform secondary and tertiary cells. However, in *P. callisporum* the conidia are pale brown with stellate tertiary cells characterized by 5 radial projections (Castañeda-Ruiz & al. 2009). *Phaeocandelabrum pseudocallisporum* is easily distinguished from the other species of *Phaeocandelabrum* by the brown, thick-walled

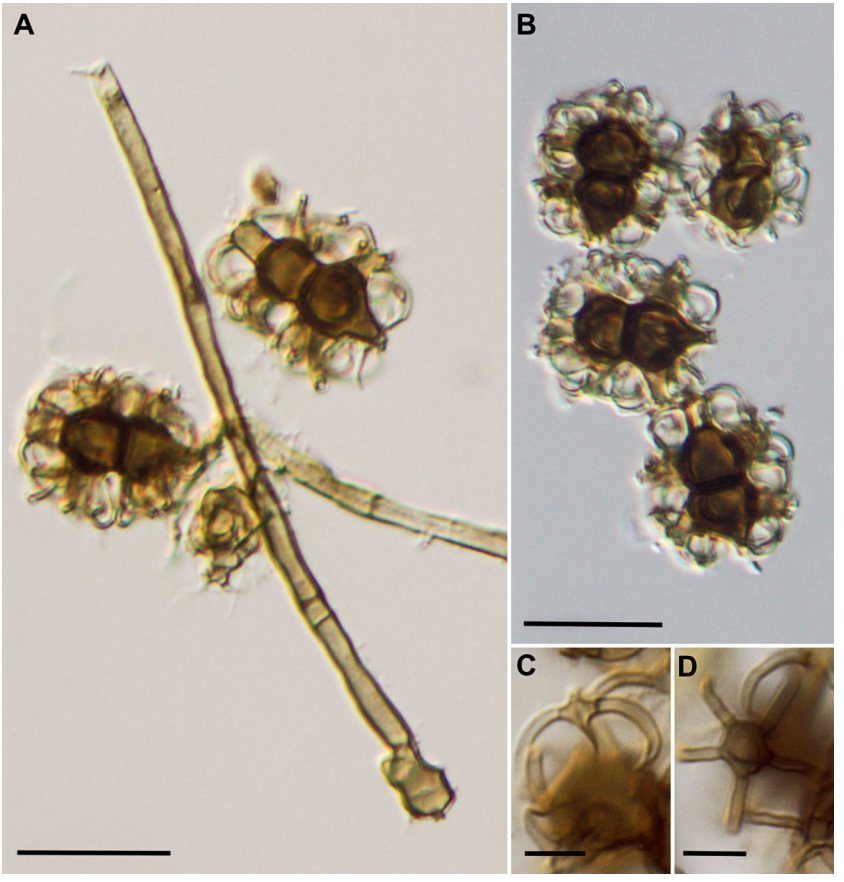

Fig. 1. *Phaeocandelabrum pseudocallisporum* (holotype, HUEFS 252202): A. Conidiophore with conidia (general aspect); B. Conidia; C. Sickle-like tertiary cells (detail); D. Secondary cell with five tertiary cells (top view). Scale bars: A, B = 20 µm; C, D= 5 µm.

conidia, with two central cells, and 4–6 secondary cells which originate 4–5 tertiary cells sickle-shaped at the apex. For a reliable taxonomic decision, the type material of *P. callisporum* (HUEFS56701) was analyzed. There are no molecular data on *Phaeocandelabrum* spp. to date.

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